

Remarks**I. Status**

Claims 1-5 and 10-44 are pending in the application. Claims 1, 5, 10, 18, 29, 32, 38 and 42 are amended. Claims 43-44 are new.

II. Telephone Interview

Applicant would like to sincerely thank the Examiner for conducting a telephone interview on May 31, 2007. Distinctions between the claimed invention and the cited reference (Polfer) were discussed. In particular, it was agreed that Polfer does not teach or suggest identifying valid data on a storage device by reading data blocks that contain file data. The claims are amended as indicated above to reflect this distinction. In addition, the 112 rejection was discussed, as described in more detail below.

III. Claim Rejections - 35 U.S.C. § 112

Claims 18-24, 35-36 and 42 have been rejected under 35 U.S.C. 112 as allegedly failing to comply with the written description requirement. The rejection is respectfully traversed.

Claims 18-24, 35 and 42

The Office Action alleges that the elements “second processor” as recited in claims 18, 35 and 42 are not described in the Specification. (Office Action, page 3). The applicants respectfully disagree and submit that this claim elements are clearly described in the Specification.

The applicant believes it will be helpful to discuss the support in the Specification for both the “first processor” and the “second processor.” In the example described in the

Specification, the “first processor” and the “second processor” each comprises a software program and a respective computer. The first claimed processor in this example comprises software running on the “storage management system 150.” The storage management system 150 is a computer (it “may be realized using a storage server,” as described at page 6, lines 6-12). The “storage management system 150” includes the “storage manager 155,” which is “typically software.” (Page 6, line 6-7). The “storage manager 155” performs the steps associated with the “first processor” as recited in claim 18. For example, the “storage manager 155 starts recording I/O accesses to device 140.” (Page 8, lines 7-8). The “storage manager 155” additionally uses the “list of blocks” to “replicate” blocks containing valid data. (Page 9, lines 1-3).

The claimed “second processor” is supported by the “client computer,” which includes and is controlled by the “first software program 120,” as described at page 7, line 7. The “first software program 120” performs the steps associated with the “second processor” of claim 18. For example, the “software program 120 uses the file system to thoroughly traverse all the data on device 140, performing read operations on all the allocated data blocks.” (Page 8, lines 8-9). The “software program 120 notifies the storage manager 155 to start recording I/O accesses to device 140.” (Page 8, lines 6-7).

Claim 36

The Examiner has rejected claim 36 because the specification allegedly lacks support for the claimed limitation, “wherein the at least one processor comprises at least one computer.” The rejection is respectfully traversed.

As discussed above, each claimed “processor” comprises both software and a computer. Therefore the language “at least one processor comprises at least one computer” is supported by the Specification.

In addition, the claimed “at least one processor” may be alternatively be interpreted to be the computer itself. While the term “processor” often refers to a microprocessor, as the Examiner implies, the term “processor” is also commonly used to signify a computer. The definition of “processor” in Webster’s II New Riverside Dictionary, Revised Edition (Houghton Mifflin Company, New York, 1996) includes the following:

1. One that processes. 2. a. **A computer.** b. A central processing unit of a computer.
(Emphasis added).

According to the definition set forth above, a processor can comprise “at least one computer,” as claimed.

Therefore, it is respectfully submitted that the rejections of claims 18-24, 35-36 and 42 under 35 U.S.C. 112 should be withdrawn.

Claim 37

Claim 37 has been rejected under 35 U.S.C. 112 as being allegedly indefinite. Claim 37 has been amended as shown above.

IV. Claim Rejections - 35 U.S.C. § 102

Claims 1-2, 10-11, 13, 18, 20, 25-26, 28-29, 31-32, 34-35 and 37-42 have been rejected under 35 U.S.C. 102(e) as being allegedly anticipated by U.S. Patent No. 6,665,779 (“Polfer”).

Independent claim 1 defines a method for replicating data from a storage device. Claim 1 has been amended to require “identifying on a storage device at least one data block comprising file data,” and “performing at least one read operation with respect to the at least one data block.” Claim 1 further requires “recording one or more I/O accesses performed with respect to the storage device in association with the at least one read operation,” “identifying, based on the recorded I/O access information, one or more data blocks on the storage device that contain valid data” and “replicating the data blocks that contain valid data.” Support for the amendments to claim 1 is found at page 5, lines 7-19, for example. Independent claim 10 is a system claim corresponding to claim 1.

Polfer discloses a method for backing up data from a storage device. The storage device’s file system maintains a file allocation table (“FAT”) to record where valid data is stored on the storage device. (Col. 6, lines 15-20). As is known in the art, a FAT is created when the storage device is formatted, and is continually updated as data is written or deleted from the storage device. The FAT indicates where file data is stored, but does not itself contain any file data. In accordance with Polfer, the FAT is examined, and a block map or file is generated based on the FAT in order to indicate whether selected blocks include valid data to be backed up. (Col. 6, lines 15-18). Specifically, the block map is generated by examining the FAT and setting flags indicating whether or not each of the selected blocks contains valid data. (Col. 6, lines 20-29). As a result, the block map includes an entry for each of the selected blocks to indicate whether the associated block has any data to be backed up. (Col. 6, lines 18-20). The applicants wish to emphasize that the block map is created by reading the FAT, not by reading the files stored in the data blocks themselves.

Subsequently, the block map is traversed and only those blocks that contain data to be backed up as indicated in the block map are backed up from the partition. (Col. 6, lines 33-35). Again, the applicants wish to point out that Polfer “reads” the block map (not the file data in the data blocks themselves) and then backs up selected data blocks based on information in the block map.

Accordingly, Polfer does not teach or suggest “identifying on a storage device at least one data block comprising file data,” and “performing at least one read operation with respect to the at least one data block,” as required by claim 1, or a processor configured to do so, as required by claim 10. Nowhere does Polfer teach or suggest reading file data to identify valid data. As discussed in the May 31 telephonic interview, the act of examining the FAT itself (or the block map) does not meet the claimed limitations because the FAT is not a “data block comprising file data,” as required by amended claim 1.

Accordingly, claim 1 and its dependent claims, and claim 10 and its dependent claims, are not anticipated by Polfer. For the same reasons, independent claims 18, 29, 32, 35, 38 and 42, and the claims that dependent upon them, are also not anticipated by Polfer.

V. Claims Rejections - 35 U.S.C. § 103

A. Claims 3, 12, 21 and 27

Claims 3, 12, 21 and 27 have been rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Polfer in view of U.S. Patent Application No. 2003/0195865 (Long). The rejection is respectfully traversed.

Claim 3 depends from amended independent claim 1. Claim 12 depends from amended independent claim 10. Claim 21 depends from amended independent claim 18. Claim 27 depends from amended independent claim 5. For the reasons set forth herein, amended claims 1,

5, 12 and 18 are patentable over the cited art. (Amended claim 5 is discussed below). Therefore, claims 3, 12 and 21 are also patentable over the cited art.

B. Claims 4-5, 14-17, 19 and 22-24

Claims 4-5, 14-17, 19 and 22-24 have been rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Polfer in view of U.S. Patent No. 5,668,971 (“Neufeld”). The rejection is respectfully traversed.

Claim 4, which depends from amended independent claim 1, is allowable because amended claim 1 is patentable over the cited art, as discussed above.

Amended independent claim 5 contains certain limitations similar to those of claim 1. For example, claim 5 requires “identifying on the storage device at least one data block comprising file data” and “performing at least one read operation with respect to the at least one data block.” As discussed above, Polfer does not teach or suggest these limitations. Neufeld also fails to teaches or suggests these limitations. In addition, Polfer and Neufeld in combination do not teach or suggest these limitations. None of the other cited art teaches or suggests the combination of amended claim 5, either. Therefore, amended claim 5 is also patentable over the cited art.

Claims 14-17, which depend from amended claim 10, are allowable because amended claim 10 is allowable, as discussed above.

Claims 19 and 22-24, which depend from amended independent claim 18, are allowable because amended claim 18 is allowable, as discussed above.

C. Claims 30 and 33

Claims 30 and 33 have been rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Polfer in view of U.S. Patent No. 6,757,778 (“Rietschote”). The rejection is respectfully traversed.

Claim 30, which depends from amended independent claim 29, is allowable because amended claim 29 is allowable, as discussed above. Claim 33, which depends from amended independent claim 32, is allowable because amended claim 32 is allowable, as discussed above.

VI. New claims 43-44

New claim 43 depends from claim 1 and requires “identifying on the storage device at least one data block comprising file data and referenced in a file system associated with the storage device.” New claim 44 depends from claim 43 and requires “examining the file system” and “identifying one or more files stored on the storage device based on information in the file system.” Support for new claims 43-44 is found at page 5, lines 7-19, for example.

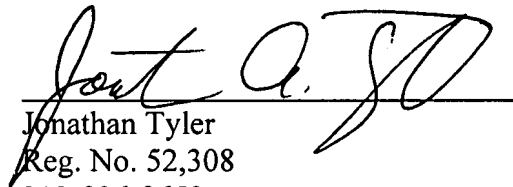
New claims 43-44 depend from amended claim 1, which is patentable over the cited art, as discussed above. Therefore, new claims 43-44 are also patentable over the cited art.

VII. Conclusion

In view of the foregoing, each of claims 1-5 and 10-44, as amended, is believed to be in condition for allowance. Accordingly, reconsideration of these claims is requested and allowance of the application is earnestly solicited.

Respectfully submitted,
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